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News Releases

NAMRU-2 Researcher Presents Rare Case study of Dengue Infection at ASTMH 2016

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This 2006 photograph depicted a female Aedes aegypti mosquito while she was in the process of acquiring a blood meal from her human host, who in this instance, was actually the biomedical photographer, James Gathany, here at the Centers for Disease Control. The feeding apparatus consisted of a sharp, orange-colored "fascicle" that was covered in a soft, pliant sheath called the "labellum" while not feeding. The labellum was shown here retracted as the sharp "stylets" contained within pierced the host's skin surface, thereby, allowing the insect to obtain its blood meal. The orange color of the fascicle was due to the red color of the blood as it migrated up the thin, sharp translucent tube. Note the distended abdominal exoskeleton, which being translucent, allowed the color of the ingested blood meal to be visible. (Photo from Centers for Disease Control and Prevention (CDC))

SILVER SPRING, MD- The 65th annual meeting of the American Society of Tropical Medicine and Hygiene (ASTMH) held in Atlanta, Georgia, Nov 13-17, provided more than a few examples of how much can be accomplished through collaboration.

The U.S. Naval Medical Research Unit No. 2 (NAMRU-2) under the guidance of Lt. Cmdr. Jamal Dejli, Head of Laboratory Services, identified a subject with a co-infection of two dengue serotypes. This subject was enrolled through the passive cohort Febrile Syndromic Surveillance (FSS) study conducted by NAMRU-2 in collaboration with the Cambodian Ministry of Health.

During poster sessions at ASTMH, Dejli presented the results on the first serotype 1 and 2 co-infection of dengue fever found in Cambodia. According to Dejli, co-infection is the simultaneous presence of two or more pathogens in the same host. These pathogens can be from a different species, or from the same species, but, in this case, from different dengue serotypes.

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“A Serotype is a specific strain of a pathogen with unique characteristics compared to other serotypes,” said DeJli. “The only dengue co-infection case reported in Cambodia was with serotypes 1 and 3 in 2008.”

According to the Center for Disease Control and Prevention (CDC) web site, the dengue virus is a leading cause of illness and death in the tropics and subtropics. As many as 400 million people are infected yearly. Transmitted to humans by mosquitos, most commonly the *Aedes aegypti* mosquito, symptoms of dengue fever include vomiting, fever, chills, difficulty breathing, gingival bleeding, and severe pain.

There are four dengue fever serotypes, and in Cambodia there are seasonal variations to be considered. The highest rates of the disease are observed during the wet season due to the increased presence of mosquitoes.

“There are three major military exercises held every year in Cambodia involving U.S. troops and the Royal Cambodian Armed Forces. Knowing the trend and the types of serotypes help with clinical management and therefore protects the service members during deployment,” said DeJli.

“Dengue fever is curable and in the case of this subject, he fully recovered within a week. However [sic], in patients with underlying conditions, the elderly or the very young, the virus can exacerbate the course of the illness and in some cases can be fatal,” said DeJli.

DeJli attended the recent ASTMH annual meeting for the first time, and was very pleased with the quality of information presented by other participants while there. “This was a great opportunity for me to see what other scientists are doing in dengue research, in particular seeing the progress achieved in dengue pathogenesis mechanisms and vaccine trials.

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